Freeman's Minnesota Plant Diseases.[1] — Simplicity, attractiveness, and full illustration are among the qualities of an ideal publication on agricultural science if it is to reach the people without the intervention of a middle-man. These qualities are possessed by a recent book on the diseases of plants prepared by Professor Freeman under the direction of the Geological and Natural History Survey of Minnesota,— a State which spends large sums annually on the study of its native resources and limitations, but the Agricultural Experiment Station of which is said never to have employed a special plant pathologist. The treatment falls under three general heads: fungi and their life history; economic applications; and diseases of plants. The book is likely to realize its author's hope of making the intelligent farmer who may read it an intelligent observer and assistant to the expert investigator.

W. T.

Ward's Flowers of English Trees and Shrubs.[2]—This volume, the third in the author's work on trees, is devoted to a study of the flowers and inflorescences of the woody plants of England. It is essentially a book for the layman. It is to be recommended for its freedom from those grievous errors which so often characterize the "popular" books of a certain class of literary aspirants in this country. The amateur student will receive all the aid and instruction he needs, while the technical student will find a large amount of valuable material presented in a lucid and concise form.

The first part of the book is general and is devoted to a study of the more common types of flowers and inflorescences. The reader is first introduced, by means of a few well chosen examples, to the typical inflorescences and then to their variations. There next follows a treatment of the flower, its different parts, their nature and development. The general part of the book concludes with two chapters on the ecology of the flower. Naturally, these chapters concern themselves with the process of pollination and the characters of the flower which are correlated therewith. The entire material of Part I is admirably selected and lucidly set forth.

The second part of the book is special and takes the form of a man-

[1] Freeman, E. M. *Minnesota Plant Diseases.— Report of the Survey, Botanical Series*, v. St. Paul, published by the Regents of the University, July 31, 1905. 8vo, xviii + 432 pp., 211 figs.

[2] Ward, H. Marshall. *Trees, Vol. III. Flowers and Inflorescences.* Cambridge, University Press, 1905. 12mo., 402 pp., 142 figs.

ual for the classification of the common English trees, based upon their flowers and inflorescences. The willows are treated separately in an appendix. Tables are there given for the classification of willows when pistillate or staminate catkins are alone available.

The book is concluded with a copious glossary which defines the technical terms necessarily used in a book of this sort.

H. S. R.

Notes.— Dr. Scott's Wilde lecture on the "Early History of Seed-bearing Plants as Recorded in the Carboniferous Flora" is published, with illustrations, in vol. 49, part 3, of the *Memoirs and Proceedings of the Manchester Literary and Philosophical Society.*

The classification of Monocotyledons is further discussed by Delpino in series 5, vol. 10, of the *Memorie della R. Accademia delle Scienze* of Bologna.

A short illustrated note on the bark characters of trees, by Peet, is contained in *The Country Calendar* for November, 1905.

An address on plant morphology and taxonomy, by Kraemer, is published in the *American Journal of Pharmacy* for September, 1905.

A paper on contractile vacuoles and the frothy structure of protoplasm, by Degen, forms Heft 9–11, Abteilung 1, of the *Botanische Zeitung* for 1905.

Lindemuth (*Die Gartenwelt*, Oct. 28, 1905) has propagated Rex begonias from the leaves with long petioles. The petiole strikes root from the base and produces a crown of leaves at the tip. The petiole undergoes no great modification in form or structure except to increase somewhat in size but it may function as the stem of the plant for a long period of time.

The influence of color in floral ecology is analyzed in a paper by Delpino forming part of series 6, vol. 1, of the *Memoire della R. Accademia delle Scienze* of Bologna.

Studies on the composition and metabolism of apples, by Bigelow, Gore, and Howard, form *Bulletin 94* of the Bureau of Chemistry, U. S. Department of Agriculture.

The influence of environment upon the composition of the sugar beet is discussed by Wiley in *Bulletin 95* of the Bureau of Chemistry, U. S. Department of Agriculture.